UNIT SPECIFIC TECHNICAL MEMORANDUM: FORMER ARMY BARRACKS SEPTIC SYSTEMS

PRATT & WHITNEY, EAST HARTFORD, CT

AREA: North Airport

SUB-AREA: Rentschler Field Former Army Barracks

ENVIRONMENTAL UNIT: Former Army Barracks Septic Systems

Location: On the northern portion of the airport runway area (Drawing ___).

Description: The Rentschler Field Former Army Barracks extended from the northern end of runway 18 westward into the present UTRC Area. There were approximately 33 buildings (including barracks, mess, recreation, dispensary, supply and administration, operations, warehouses, school, and radio). The typical size of the buildings was 20 feet by 100 feet. Sixteen septic systems of various size were installed to handle the sanitary wastewater. Eight of the septic systems were located on UTRC property.

Dates of Operation: The former barracks were in operation from approximately 1942 to 1948.

Processes: The former army barracks were used for military personnel as temporary quarters.

Specific Contaminants of Concern: No information on chemical usage is available for the former army barracks.

Area-wide Classes of Contaminants: Volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), the RCRA 8 metals plus nickel and zinc, and total petroleum hydrocarbons (TPH).

Potential Release Mechanism: Impacts to soils and groundwater from potential seepage through cracks or joints in the septic tanks or from the leaching fields associated with the former barracks.

INVESTIGATION AND REMEDIATION ACTIVITIES:

Due to the potential for a release associated with this unit, a subsurface investigation to determine the degree and extent of soil contamination was performed in August 1996. Prior to 1996, no investigation had reportedly been performed. A facility plan dated November 5, 1947, which was a field drawing for use in making a final layout drawing, was reviewed to provide information for the August 1996 investigation. Borings were not performed for the septic systems located on UTRC property.

August 1996 Investigation (LEA):

Description: On August 6, 1996, a geophysical investigation was conducted to determine the location of septic systems associated with the former army barracks. Ground Penetrating Radar

(GPR) survey lines were run over septic system locations shown on the 1947 field plan.

On August 9, 1996, three soil borings (NA-SB-01 through NA-SB-03) were advanced to a depth of 15 feet in the vicinity of locations that had GPR signatures which appeared to be characteristic of septic systems, as shown on Figure ___. The depth of 15 feet was selected to ensure that sufficient data were collected for comparisons against the direct exposure criteria in the Connecticut Remediation Standard Regulation (RSR). Soil samples were collected from each of the borings in continuous 2-foot intervals to 14 feet, with a one-foot interval from 14 to 15 feet.

A total of 25 soil samples were submitted to the LEA Analytical Laboratory and screened for the presence of select VOCs. Based on visual, olfactory, or instrument evidence, and with consideration of the potential release mechanism, two samples from each of the soil borings were submitted to Averill Environmental Laboratory, Inc. (AEL) and analyzed for the presence of VOCs, SVOCs, the RCRA 8 metals plus nickel and zinc, and TPH. A summary of the samples collected and analyses performed during this investigation is included on Table 1.

Investigation Results: Several features during the GPR survey were noted that could have been indications of septic system components. No evidence of septic tanks were noted for the septic systems located on P&W's property. Only pipe-like structures were noted in this area.

Based on the boring logs, groundwater was encountered at approximately 5 feet in the three soil borings. Varved clay was encountered at 12 feet in borings NA-SB-02 and NA-SB-03, but not in boring NA-SB-01.

Concentrations of constituents detected in soil samples collected for this unit are presented in Table 2. No VOCs were detected in the soil samples submitted to the LEA Analytical Laboratory. No VOCs, SVOCs, or TPH were detected in the soil samples submitted to AEL. One or more of the metals analyzed were detected in each of the soil samples submitted for analysis. These metals include arsenic, barium, cadmium, chromium, copper, nickel, and zinc.

Data Evaluation and Conclusions: Based on a review of the analytical results, there is no evidence that a release has occurred, and it is believed that the area has been adequately characterized. The data were compared against the default numeric criteria included in the RSR and the site-specific background soil concentrations for the North Klondike for various inorganic constituents (Fuss & O'Neill, 1994). This evaluation of the soils data is based on a comparison to the residential and industrial/commercial direct exposure criteria (DEC), the GB pollutant mobility criteria (PMC) included in the RSR, as well as the site-specific background soil concentrations.

The concentrations of the metals detected in these samples are typical of "Walpole Soils" background concentrations (Fuss & O'Neill, 1994), except for the sample from 12 to 14 feet in boring NA-SB-02. The soil from this sample was collected in the varved clay. The concentrations of the metals detected in this sample were typical of "Clay" background concentrations, and are not indicative of a release from this unit. For the metals detected in soil, no exceedances of the default numeric residential or industrial/commercial direct exposure criteria were noted.

PROPOSED ACTIONS:

Based on the lack of evidence of a release or septic tanks on P&W's property and adequate characterization having been performed, no further action is warranted for this unit.